Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Canceled)

2-3. (Cancelled)

4. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein a thin film of the Group-III-element nitride is formed on the surface of the seed substrate beforehand.

5-8. (Cancelled)

9. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein the at least one Group III element is supplied to the flux while the Group-III-element nitride single crystals grow.

10. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein the at least one Group III element is gallium (Ga), and the Group-III-element nitride single crystals are gallium (Ga) nitride single crystals.

11. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein the alkali metal is at least one selected from the group consisting of lithium (Li), sodium (Na), potassium (K), rubidium (Rb), cesium (Cs), and francium (Fr) while the alkaline-earth metal is at least one selected from the group consisting of calcium (Ca), strontium (Sr), barium (Ba), and radium (Ra).

12. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein the flux of the at least one metal element is a sodium flux, a mixed flux of sodium (Na) and calcium (Ca), or a mixed flux of sodium (Na) and lithium (Li).

13-16. (Cancelled)

17. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein the at least one Group III element and nitrogen react with each other under conditions including a temperature of 100°C to 1200°C ~~and a pressure of 100 Pa to 20 MPa~~.

18. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein the nitrogen (N)-containing gas is at least one of nitrogen (N_2) gas and ammonia (NH_3) gas.

19. (Cancelled)

20. (Currently Amended) The ~~production~~ method according to claim 4, wherein the thin film formed on the seed substrate is single crystals of Group-III-element nitride or is amorphous Group-III-element nitride.

21-25. (Cancelled)

26. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein transparent single crystals are grown.

27-36. (Cancelled)

37. (Withdrawn – currently amended) An apparatus that is used in the ~~a production~~ method for producing Group-III-element nitride single crystals according to claim [[1]]46, comprising:

a means for heating a reaction vessel for preparing a flux by heating at least one metal element selected from the group consisting of an alkali metal and an alkaline-earth metal contained in the reaction vessel;

a means for feeding nitrogen-containing gas to be used for reacting a Group III element contained in the flux and nitrogen to each other and growing the Group-III-element nitride single crystals on a seed substrate by feeding the nitrogen-containing gas into the reaction vessel; and

a means for dissolving the nitrogen-containing gas supplied from a high-pressure nitrogen-containing gas in a range of pressure from 100 pa to 20 Mpa in the flux of the at least one metal element in which the Group III element is dissolved, and flowing the flux ~~containing the at least one metal element and the Group III element~~ dissolving nitrogen-containing gas continuously ~~on~~ across a surface of the seed substrate in a thin layer state so as to allow the nitrogen-containing gas to dissolve in the flux and supply nitrogen continuously to a growth face of the crystal of the Group-III-element nitride and produce and grow the crystal on the seed substrate by rocking the reaction vessel in a manner that the reaction vessel is tilted in at least one direction ~~in a certain direction, wherein the means tilts the reaction vessel in one direction and then tilts it in an opposite direction to the one direction~~.

38. (Cancelled)

39. (Withdrawn – currently amended) A reaction vessel that is used in the ~~a production~~ method for producing Group-III-element nitride single crystals according to claim [[1]]46,

wherein the reaction vessel has a cylindrical shape and includes two projections that protrude from an inner wall thereof toward the circular center, and a substrate placed between the two projections.

40. (Cancelled)

41. (Withdrawn – currently amended) A reaction vessel that is used in the ~~a production~~ method for producing Group-III-element nitride single crystals according to claim [[1]]46,

wherein the reaction vessel is formed of or coated with at least one material selected from the group consisting of AlN, SiC, and a carbon-based material.

42 - 43. (Cancelled)

44. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein Group-III-element nitride single crystals having a dislocation density of $10^4/cm^2$ or lower are grown.

45. (Currently Amended) The ~~production~~ method according to claim [[1]]46, wherein Group-III-element nitride single crystals having a largest diameter of at least 2 cm are grown.

46. (New) A method for producing Group-III-element nitride single crystals comprising:

heating a reaction vessel containing a seed substrate for forming the Group-III-element nitride, a flux that comprises at least one metal element selected from the group consisting of an alkali metal and an alkaline-earth metal, and at least one Group III element selected from the group consisting of gallium (Ga), aluminum (Al), and indium (In);

dissolving a nitrogen-containing gas in the flux of the at least one metal element in which the at least one Group III element is dissolved so as to produce and grow the Group-III-element nitride single crystals on the seed substrate; and

providing a continuous flow of the flux dissolving nitrogen-containing gas across a surface of the substrate in a thin layer state so as to allow the nitrogen-containing gas to dissolve in the flux and supply nitrogen continuously to growth faces of the crystals,

wherein the Group-III-element nitride is produced and grown on the seed substrate with the flux containing nitrogen that is supplied from a high-pressure nitrogen-containing gas in a range of pressure from 100 pa to 20 Mpa, and

the continuous flow of the flux dissolving nitrogen-containing gas across a surface of the substrate in a thin layer state is provided by rocking the reaction vessel in a manner that the reaction vessel is tilted in at least one direction.